

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process ~~Process~~ for preparing methacrylic acid
comprising:

~~, characterized in that~~

- a) reacting acetone cyanohydrin is reacted at temperatures below 80°C with a maximum of 1.2 equivalents of sulphuric acid in the presence of 0.05-1.0 equivalent of water; wherein said reacting occurs in the presence of an inert polar solvent ~~inert under the reaction conditions to form at a temperature below 80°C and forms a stirrable solution of an efficiently stirrable solution of the corresponding amide sulphate(s) in the inert solvent,~~
- b) adding water to the stirrable solution of a) and removing the inert polar solvent to produce a solution containing after adding water, this solution, in the presence of or after preceding removal of the inert solvent, is converted to a solution consisting substantially of water, ammonium hydrogensulphate and alpha-hydroxyisobutyric acid,
- c) adding an extractant to remove the hydroxyisobutyric acid from the solution produced by b) and recovering a solution containing alpha-hydroxyisobutyric acid in the presence of a metal salt of alpha-hydroxyisobutyric acid ~~is removed from the aqueous ammonium hydrogensulphate solution by extraction with a suitable extractant,~~
- d) converting in liquid phase the solution containing alpha-hydroxyisobutyric acid obtained by c) at a temperature
after removing the extractant, the alpha-hydroxyisobutyric acid obtained in high concentration, in the presence of a metal salt of the alpha-hydroxyisobutyric acid, is converted at temperatures
between 160-300°C in the liquid phase to a mixture obtained as a distillate and consisting substantially of substantially comprising methacrylic acid and water, and

e) recovering the methacrylic acid

~~methacrylic acid is obtained distillatively in highly pure form from this mixture or the product mixture obtained under d) (MAA water) is used as an extractant for the isolation of the alpha-hydroxyisobutyric acid in step e) and the materials of value are subsequently distillatively separated from one another.~~

Claim 2 (Currently Amended): ~~Process according to~~ The process of Claim 1, wherein ~~characterized in that~~ process step a) is performed at a temperature of less than 70°C.

Claim 3 (Currently Amended): ~~Process according to~~ The process of Claim 1, ~~characterized in that~~ wherein the inert polar solvent used is an inert C₂-C₁₂ carboxylic acid, inert nitro compound, or an aliphatic sulphonic acid.

Claim 4 (Currently Amended): ~~Process according to~~ The process of Claim 3, wherein the inert polar solvent ~~characterized in that the inert C₂-C₁₂ carboxylic acid~~ is a carboxylic acid selected from the group of acetic acid, propionic acid, methylpropanoic acid, butyric acid, and isobutyric acid; ~~and or a~~ or a corresponding homologous longer-chain aliphatically branched or ~~and~~ unbranched carboxylic acid.

Claim 5 (Currently Amended): ~~Process according to~~ The process of Claim [[4]] 1, wherein the inert polar solvent ~~characterized in that the inert C₂-C₁₂ carboxylic acid~~ is acetic acid.

Claim 6 (Currently Amended): ~~Process according to Claim 3, characterized in that~~ the inert nitro compound

The process of Claim 1 wherein the inert polar solvent is nitromethane.

Claim 7 (Currently Amended): ~~Process according to Claim 3, characterized in that the aliphatic sulphonic acid~~

The process of Claim 1, wherein the inert polar solvent is methanesulphonic acid.

Claim 8 (Currently Amended): ~~Process according to Claim 1, characterized in that,~~

The process of Claim 1, wherein the aqueous ammonium hydrogensulfate in the solution formed in step b) is removed by treatment in a sulphuric acid contact plant to form nitrogen and sulfuric acid, and the sulfuric acid is recycled into step a)

~~in step c), hydroxyisobutyric acid is separated from the aqueous ammonium hydrogensulphate solution by extraction with an extractant and this~~

~~aqueous ammonium hydrogensulphate solution is converted in a sulphuric acid contact plant with formation of nitrogen to sulphuric acid which can be is recycled into the amidation in step a).~~

Claim 9 (Currently Amended): ~~Process according to Claim 8, characterized in that the extractant used are~~

The process of Claim 8, wherein the extractant in step c) is selected from the group consisting of nitro compounds, sulphonic acids and esters derived therefrom, carboxylic acids and esters derived therefrom, methyl hydroxyisobutyrate, and sparingly water-soluble ketones, ethers or aromatic solvents of the general formula $R-C(=O)-R'$ (where $R = \text{Me-}$ and $R' = \text{C-1 to C-12 hydrocarbons which may be branched or unbranched}$).

Claim 10 (Currently Amended): ~~Process according to Claim 8, characterized in that the extractants used are~~

The process of Claim 8, wherein said extract is methyl ethyl ketone or methyl isobutyl ketone.

Claim 11 (Currently Amended): ~~Process according to Claim 1, characterized in that step f) is performed as follows~~

The process of Claim 1, further comprising step f):

f) reacting the methacrylic acid with an alcohol to obtain a methacrylic acid ester
~~the mixture, obtained under step c), of methacrylic acid/water or pure methacrylic acid itself is reacted with an alcohol to obtain the ester desired as the product (= methacrylic ester) in a form desired for the application by known methods.~~

Claim 12 (Currently Amended): ~~Process according to Claim 11, characterized in that~~

The process of Claim 11, wherein the alcohol is selected from the group consisting of
methanol, ethanol, propanol and corresponding homologous and analogous ~~compounds~~
alcohols up to C₁₂ hydrocarbons.

Claim 13 (Currently Amended): ~~Process according to Claim 8, characterized in that~~

The process of Claim 8, wherein a full conversion[[s]] of greater than (>)99% [[are]]
is achieved at a reaction time for the amidation in step a) of below 60 min[[,]] and at a
reaction time for the hydrolysis in step d) of below 120 min.

Claim 14 (Currently Amended): ~~Process according to Claim 8, characterized in that~~

The process of Claim 8, wherein a full conversion[[s]] of greater than (>)99% [[are]]
is achieved at a reaction time for ~~the~~ amidation in step a) of below 30 min[[,]] and at a
reaction time for ~~the~~ hydrolysis in step d) of below 100 min.

Claim 15 (Currently Amended): ~~Process according to Claim 8, characterized in that~~
The process of Claim 8, wherein a full conversion[[s]] of greater than (>)99% [[are]]
is achieved at a reaction time for ~~the~~ amidation in step a) of below 20 min[[,]] and at a
reaction time for ~~the~~ hydrolysis in step d) of below 75 min.

Claim 16 (Currently Amended): ~~Process according to Claim 1, characterized in that~~
The process of Claim 1, wherein the yield of methacrylic acid is at least 95%.

Claim 17 (Currently Amended): ~~Process according to Claim 1, characterized in that~~
The process of Claim 1, wherein the yield of methacrylic acid is at least 98%.

Claim 18 (Currently Amended): ~~Process according to Claim 1, characterized in that~~
The process of Claim 1, wherein the yield of methacrylic acid is up to 99.5%.